



IES INDOOR REPORT
PHOTOMETRIC FILENAME : 82-4-L64-835-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN from BALLABS TEST NO. 20804.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 07-14-2020
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO. 64836
[LUMINAIRE] 4-28 LED 22" ARRAYS 4' INDUSTRIAL LUMINAIRE
[MORE] WHITE REFLECTOR w/OPEN BOTTOM
[LUMCAT] 82-4-L64-835-DIM-UNV

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 6337 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 148 |
| Total Luminaire Watts | 42.8 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.34 |
| Spacing Criterion (90-270) | 1.30 |
| Spacing Criterion (Diagonal) | 1.44 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 4.00 ft |
| Luminous Width (90-270) | 1.08 ft |
| Luminous Height | 0.00 ft |



LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 6060 | 5966 | 5889 |
| 55 | 5920 | 5864 | 3042 |
| 65 | 5557 | 3026 | 2968 |
| 75 | 4418 | 981 | 914 |
| 85 | 1527 | 763 | 339 |

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CANDELA TABULATION

| | <u>0.0</u> | <u>22.5</u> | <u>45.0</u> | <u>67.5</u> | <u>90.0</u> |
|-----------|------------|-------------|-------------|-------------|-------------|
| 0 | 2366.449 | 2366.449 | 2366.449 | 2366.449 | 2366.449 |
| 5 | 2404.169 | 2362.478 | 2341.633 | 2337.662 | 2338.655 |
| 10 | 2378.360 | 2337.662 | 2316.817 | 2312.846 | 2312.846 |
| 15 | 2338.655 | 2296.964 | 2276.119 | 2329.721 | 2366.449 |
| 20 | 2281.082 | 2239.391 | 2284.060 | 2268.178 | 2304.905 |
| 25 | 2201.671 | 2167.921 | 2218.546 | 2136.157 | 2138.142 |
| 30 | 2114.319 | 2089.503 | 2061.709 | 2049.797 | 2047.812 |
| 35 | 2003.143 | 2051.782 | 1945.570 | 1955.497 | 1945.570 |
| 40 | 1863.181 | 1955.497 | 1839.358 | 1830.424 | 1817.520 |
| 45 | 1726.197 | 1720.241 | 1699.396 | 1678.551 | 1677.558 |
| 50 | 1551.493 | 1536.603 | 1528.662 | 1483.994 | 943.999 |
| 55 | 1367.855 | 1363.884 | 1354.951 | 708.743 | 702.788 |
| 60 | 1153.445 | 1171.313 | 623.377 | 610.472 | 610.472 |
| 65 | 945.984 | 942.013 | 515.179 | 497.312 | 505.253 |
| 70 | 698.817 | 706.758 | 397.055 | 137.977 | 108.198 |
| 75 | 460.584 | 279.924 | 102.242 | 94.301 | 95.293 |
| 80 | 237.240 | 121.102 | 73.455 | 61.544 | 57.573 |
| 85 | 53.602 | 44.669 | 26.801 | 13.897 | 11.912 |
| 90 | 1.985 | 18.860 | 6.948 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 877.13 | N.A. | 13.80 |
| 0-30 | 1880.29 | N.A. | 29.70 |
| 0-40 | 3119.07 | N.A. | 49.20 |
| 0-60 | 5421.34 | N.A. | 85.50 |
| 0-80 | 6292.07 | N.A. | 99.30 |
| 0-90 | 6337.43 | N.A. | 100.00 |
| 10-90 | 6113.53 | N.A. | 96.50 |
| 20-40 | 2241.94 | N.A. | 35.40 |
| 20-50 | 3538.65 | N.A. | 55.80 |
| 40-70 | 2938.74 | N.A. | 46.40 |
| 60-80 | 870.74 | N.A. | 13.70 |
| 70-80 | 234.27 | N.A. | 3.70 |
| 80-90 | 45.36 | N.A. | 0.70 |
| 90-110 | 0.00 | N.A. | 0.00 |
| 90-120 | 0.00 | N.A. | 0.00 |
| 90-130 | 0.00 | N.A. | 0.00 |
| 90-150 | 0.00 | N.A. | 0.00 |
| 90-180 | 0.00 | N.A. | 0.00 |
| 110-180 | 0.00 | N.A. | 0.00 |
| 0-180 | 6337.43 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 223.90 |
| 10-20 | 653.23 |
| 20-30 | 1003.16 |
| 30-40 | 1238.78 |
| 40-50 | 1296.71 |
| 50-60 | 1005.56 |
| 60-70 | 636.47 |
| 70-80 | 234.27 |
| 80-90 | 45.36 |
| 90-100 | 0.00 |
| 100-110 | 0.00 |
| 110-120 | 0.00 |
| 120-130 | 0.00 |
| 130-140 | 0.00 |
| 140-150 | 0.00 |
| 150-160 | 0.00 |
| 160-170 | 0.00 |
| 170-180 | 0.00 |

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

| RC | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 110 | 106 | 102 | 98 | 107 | 103 | 100 | 97 | 99 | 96 | 94 | 95 | 93 | 91 | 92 | 90 | 88 | 86 |
| 2 | 101 | 93 | 87 | 82 | 98 | 91 | 86 | 81 | 88 | 83 | 79 | 85 | 81 | 77 | 82 | 78 | 75 | 73 |
| 3 | 92 | 82 | 75 | 69 | 90 | 81 | 74 | 68 | 78 | 72 | 67 | 75 | 70 | 66 | 73 | 68 | 65 | 63 |
| 4 | 85 | 73 | 65 | 59 | 82 | 72 | 64 | 58 | 70 | 63 | 57 | 67 | 61 | 57 | 65 | 60 | 56 | 54 |
| 5 | 78 | 66 | 57 | 51 | 76 | 65 | 56 | 50 | 62 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 47 |
| 6 | 72 | 59 | 51 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 44 | 55 | 48 | 43 | 53 | 48 | 43 | 41 |
| 7 | 67 | 54 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 39 | 49 | 43 | 38 | 36 |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 35 | 46 | 39 | 34 | 45 | 39 | 34 | 32 |
| 9 | 58 | 45 | 37 | 32 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |

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UGR TABLE - CORRECTED

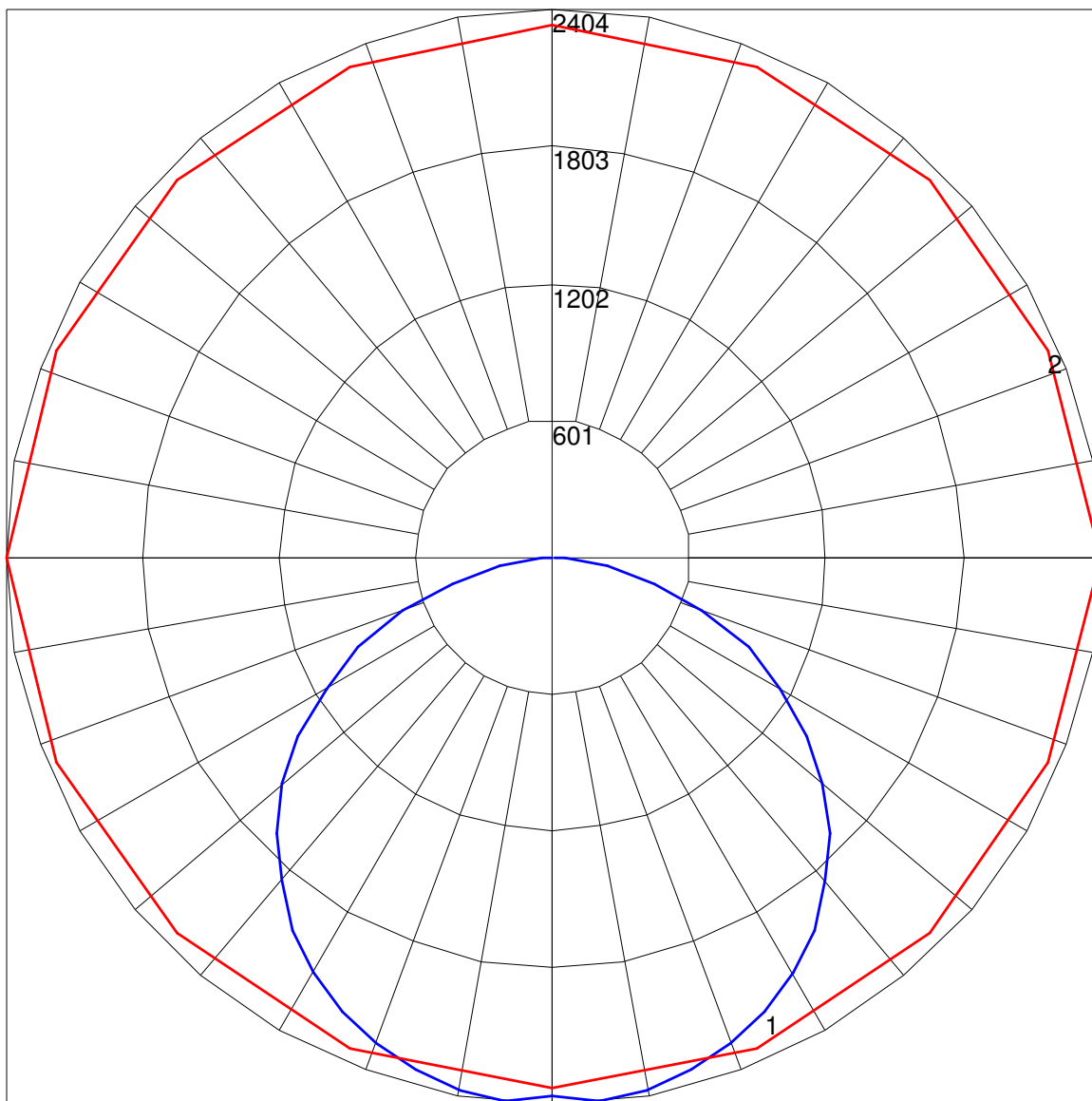
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| Ceiling Cavity | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Walls | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Floor Cavity | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

| Room Size | | UGR Viewed Crosswise | | | | | UGR Viewed Endwise | | | | |
|-----------|------|----------------------|------|------|------|------|--------------------|------|------|------|------|
| X=2H | Y=2H | 19.1 | 20.6 | 19.4 | 20.9 | 21.3 | 14.5 | 16.1 | 14.9 | 16.4 | 16.7 |
| | 3H | 20.8 | 22.2 | 21.2 | 22.6 | 22.9 | 15.1 | 16.5 | 15.5 | 16.9 | 17.2 |
| | 4H | 21.3 | 22.6 | 21.7 | 22.9 | 23.3 | 15.2 | 16.5 | 15.6 | 16.9 | 17.3 |
| | 6H | 21.6 | 22.8 | 22.0 | 23.1 | 23.5 | 15.3 | 16.5 | 15.7 | 16.9 | 17.3 |
| | 8H | 21.6 | 22.8 | 22.1 | 23.2 | 23.6 | 15.3 | 16.5 | 15.7 | 16.8 | 17.2 |
| | 12H | 21.6 | 22.7 | 22.1 | 23.1 | 23.5 | 15.3 | 16.4 | 15.7 | 16.8 | 17.2 |
| 4H | 2H | 19.1 | 20.5 | 19.5 | 20.8 | 21.2 | 15.2 | 16.6 | 15.6 | 16.9 | 17.3 |
| | 3H | 21.2 | 22.2 | 21.6 | 22.6 | 23.0 | 16.0 | 17.0 | 16.4 | 17.4 | 17.8 |
| | 4H | 21.7 | 22.6 | 22.1 | 23.0 | 23.5 | 16.1 | 17.0 | 16.5 | 17.5 | 17.9 |
| | 6H | 22.0 | 22.8 | 22.4 | 23.3 | 23.7 | 16.2 | 17.0 | 16.6 | 17.5 | 17.9 |
| | 8H | 22.1 | 22.9 | 22.5 | 23.3 | 23.8 | 16.2 | 17.0 | 16.7 | 17.4 | 17.9 |
| | 12H | 22.1 | 22.8 | 22.6 | 23.3 | 23.8 | 16.2 | 16.9 | 16.7 | 17.4 | 17.8 |
| 8H | 4H | 21.6 | 22.4 | 22.1 | 22.8 | 23.3 | 16.4 | 17.2 | 16.8 | 17.6 | 18.1 |
| | 6H | 21.9 | 22.6 | 22.4 | 23.1 | 23.6 | 16.5 | 17.2 | 17.0 | 17.7 | 18.1 |
| | 8H | 22.1 | 22.6 | 22.6 | 23.2 | 23.6 | 16.6 | 17.1 | 17.1 | 17.7 | 18.1 |
| | 12H | 22.1 | 22.6 | 22.6 | 23.1 | 23.7 | 16.6 | 17.1 | 17.1 | 17.6 | 18.1 |
| 12H | 4H | 21.6 | 22.3 | 22.1 | 22.8 | 23.2 | 16.4 | 17.1 | 16.9 | 17.6 | 18.1 |
| | 6H | 21.9 | 22.5 | 22.5 | 23.0 | 23.5 | 16.6 | 17.1 | 17.1 | 17.6 | 18.2 |
| | 8H | 22.0 | 22.6 | 22.6 | 23.1 | 23.6 | 16.6 | 17.1 | 17.1 | 17.6 | 18.2 |

Maximum UGR = 23.8

POLAR GRAPH



Maximum Candela = 2404.169 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)